



ENERGY AND ENVIRONMENT CABINET

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Leonard K. Peters
Secretary

July 14, 2014

Ms. Jennifer Woodard
US Department of Energy
Portsmouth/Paducah Project Site Office
PO Box 1410
Paducah, Kentucky 42002

RE: Kentucky's Position with Respect to Resolving the Current Northeast Plume Optimization Project Formal Dispute
Paducah Gaseous Diffusion Plant
Paducah, McCracken County, Kentucky
KY8-890-008-982

Ms. Woodard:

As you are aware, the FFA Parties are currently attempting to resolve a formal dispute over how to best address potential future discharges of Tc-99 from an optimized Northeast Plume treatment system. Although not identified as a Contaminant of Concern in the original Northeast Plume Record of Decision (ROD), Tc-99 is a potential concern for a newly optimized pump-and-treat system. This is because extraction wells, presently located at a significant distance from the facility fence line, would be relocated within the fence line and closer to higher concentrations of this groundwater contaminant. Historically, concentrations of Tc-99 have remained below 200 pCi/L in the area where the new extraction wells would be located. However, much greater concentrations of Tc-99 exist near the west side of the C-400 Building which could potentially be drawn toward the newly-relocated extraction wells. Therefore, it is prudent to contemplate under what circumstances treatment to remove Tc-99 from extracted groundwater would be required prior to discharging it to surface water.

The D1 *Remedial Action Work Plan for Optimization of the Northeast Plume Interim Remedial Action* envisions potential treatment of system effluent to remove Tc-99 if concentrations reached a certain unspecified threshold. The Explanation of Significant Differences to the original Northeast Plume ROD describing system optimization appears to suggest that this threshold is 60,000 pCi/L. This concentration is an NRC annual effluent limit for Tc-99 discharged from all facility effluent discharge points, including those that are non-

CERCLA related. This standard is based upon a 50 mrem/year dose limit which EPA has determined is outside the generally accepted risk range for a CERCLA remedial action addressing radionuclides. It is therefore unacceptable as a potential effluent limit for a CERCLA action such as the Northeast Plume Optimization project.

Over the past several months, multiple proposals have been offered for consideration by the parties with the intent of resolving the dispute. On December 17, 2013, DOE proposed that the parties agree to delay setting a Tc-99 discharge limit until such time as effluent concentrations exceed 500 pCi/L (as measured during two consecutive quarters of monitoring). DOE's most recent proposal is similar to the first; however, instead of agreeing to set a limit for Tc-99 following two consecutive quarters of exceeding 500 pCi/L at the discharge point, the parties would only agree to evaluate a process to assess increasing contaminant trends. Any limit, if later calculated, would be derived using a risk-based approach for a reasonably anticipated future land user under the teen recreator (swimmer) scenario. The EPA does not agree with DOE's proposal to use a risk-based approach since it is deemed to be inconsistent with EPA methodology for calculating ambient water quality criteria for chemicals. Instead, EPA has proposed applying a best available treatment technology to treat Tc-99 in extracted groundwater if it was detected in wells located within the zone of influence of the extraction wells at a concentration equal to or greater than 900 pCi/L (the drinking water limit for Tc-99). The 900 pCi/L concentration has historically been used at the site as a treatment goal for Tc-99 present in extracted groundwater.

The Kentucky Division of Waste Management (Division), while rejecting a 60,000 pCi/L discharge limit for the reasons stated above, is otherwise amenable to different approaches to resolving this dispute. The Division was involved in the development of the December 17, 2013 proposal and would accept this approach in the interest of moving the Northeast Plume Optimization project forward. Alternatively, the Division would accept EPA's proposal to avoid specifying a CERCLA discharge limit for Tc-99 (as measured at the discharge point) by instead installing treatment following the detection of Tc-99 at or above 900 pCi/L in upgradient groundwater. Another alternative acceptable to the Division would be for DOE to simply agree to install ion-exchange resin at the same time as the extraction wells are relocated as a best management approach while remaining silent as to a discharge limit. From the Division's perspective, these are all viable options.

If you have any questions or require additional information, please contact Brian Begley of my staff at (502) 564-6716, or e-mail at brian.begley@ky.gov.

Sincerely,



For April J. Webb, P.E., Manager
Hazardous Waste Branch

AJW:lwv:tm

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DWM File: #1210-G; Graybar ARM20120005 (NE Plume RAWP)